RE-EDUCATION OF THE NEWLY BLIND

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IV. RE-EDUCATION OF THE NEWLY BLINDED

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The task of rehabilitation of military personnel is essentially the preparation of a newly blinded serviceman to adjust to a severe sensory handicap, to learn new technic and become acquainted with special equipment and devices, to retrain old habits to meet changing needs, and to bridge the gap between regimented military life and that to which any newly blinded patient may be returning.

Regardless of the stability which the man in service may have displayed, such a permanent physical disability as blindness suddenly thrust upon him requires him to make a so-called sensory revolution. Moreover it demands that he realize the severity of his handicap and accept its limitations. Since the individual guidance given any newly blinded serviceman during his early days of rehabilitation is extremely important, every effort is made to expedite the adjustment of the rehabilitee through a carefully planned program. The principles underlying such a program of re-education and our experiences in applying them to 157 blinded sailors and Marines in this hospital are set forth in this report.

Though generalized in terms of certain habits that are standard, such as walking, reading, writing, dress, personal hygiene, and the like, the program is highly specialized for the individual in terms of intelligence, aptitudes, skills, and aspirations. Some of our patients left school in the fourth grade; others have college diplomas. Each has a program planned to help him realize his potentialities. The mental and emotional upheaval prevalent during the early days of the newly blinded patient's hospitalization is alleviated first of all by the ophthalmologist in charge who outlines for the patient what he may anticipate in medical or surgical treatment.

Introduction to training

The supervisor of re-education explains the program of retraining to the patient, answers his questions, and urges the patient to participate in every phase of the program. Fears are allayed and anxieties minimized through a frank discussion of the limitations of blindness and a positive evaluation of the rehabilitation program for his individual needs.

If a single word were used as a goal for the retraining program, it would be *independence.* To instill in the newly blinded patient the importance of this, beginning immediately, the supervisor of re-education shows the patient a Braille watch and explains how he may secure one for his own use. (These watches are furnished by the American Foundation for the Blind, 15 West 16th Street, New York, N. Y.)

The supervisor of re-education acquaints the patient with the names of the personnel of the staff and schedules interviews with these staff members. All of the data assembled from these interviews are placed at the disposal of all other staff members. Recommendations of the staff form the basis for the plans of the individual program of each patient.

The teacher-attendant

Next comes an explanation to the patient of the duties of the teacher-attendant in his retraining. This teacher-attendant is a trained hospital corpsman who aids him in going from place to place and assists him in eating, dressing, etc., in the first weeks of his adjustment, but who gradually ceases to be an attendant and actually becomes a teacher who makes of each learning experience a rehabilitative process.

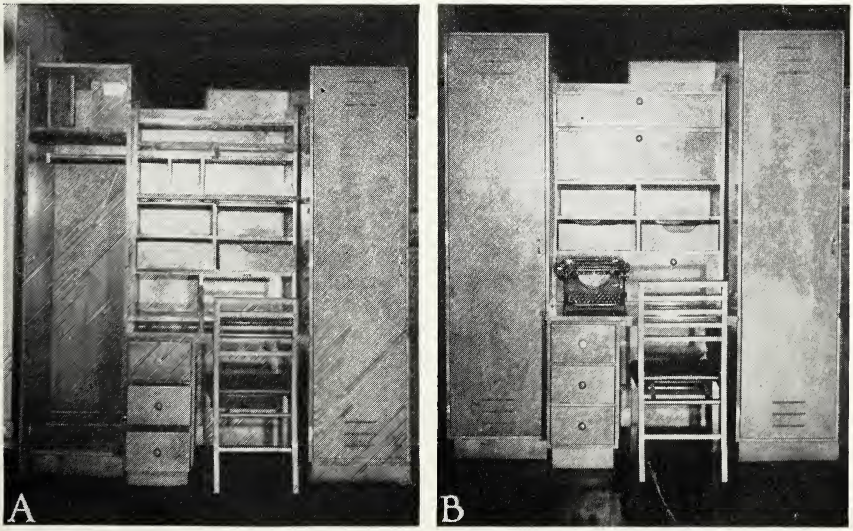
The basic re-education of the newly blinded patient is initiated by the teacher-attendant who is both friend and teacher at every level of the patient's rehabilitation. In the choice of the teacher-attendants utmost care has been taken so that intelligent men with tact, patience, perseverance, and emotional stability retrain these newly blinded patients in the care of their person and their possessions, teach them how to eat normally and with ease, encourage them to establish a normal social relationship with sighted people, and with a personal interest assume the responsibility of checking daily on the patients' participation in the program and progress in their habits.

The teacher-attendant guides the patient in productive use of his leisure time by encouraging the use of the talking book, listening to radio programs, record playing, and learning games such as dominoes, chess, checkers, card games, and the dart board. The teacher-attendant reads the patient's mail to him and assists him with personal correspondence. (All patients are urged to type their own letters as soon as their typing proficiency permits.) The importance of the teacher-attendant as a companion cannot be minimized in the early adjustment. These newly blinded patients have undergone a severe shock, and while it is not the attitude of the teacher-attendant to dominate the life of the patient, it is essential that he provide wholesome companionship in the hospital and at recreational events on and off the compound.

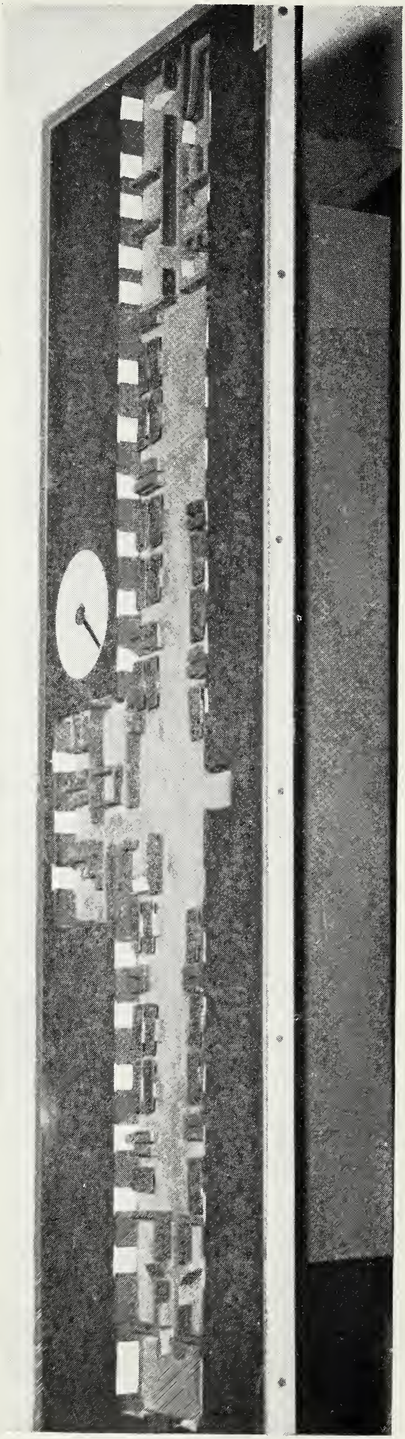
In the anticipation of normal experiences which these newly blinded patients must cope with, the teacher-attendant includes in his curriculum for instruction such things as dialing the telephone, identification of money, identification of clothes, and the ability to carry on conversation in groups or with individuals, with poise and using normal gestures, thereby guarding against blindisms and conspicuousness which these newly blinded patients resent. Again, the man has been encouraged to be *independent* when he has learned to dial a phone, and identify his own clothing. He has also learned the importance of using his memory in everyday activities.

Orientation

The patient will become acquainted with his immediate environment, learn how to choose a cane which is adequate for his own needs, how to move about in the ward and travel in the hospital, in the initial orientation instruction. His first work will be in ward orientation. In giving this instruction, the teacher-attendant accompanies the patient directly to his bed where he gives the patient a general idea of the ward, telling him of the size, the number of patients, etc. He explains the position of the patient's bed in relationship to the others in the cubicle, and the relationship of that cubicle to the entire ward. The patient is assisted in stowing his gear in his locker (fig. 1) and is encouraged to identify and organize it as he does so.



1. Desk locker used on ward for blinded patients. a. Locker open. b. Locker closed.



2. Ward model used for teaching ward orientation to the newly-blinded.

A model of the ward (fig. 2) is used by the teacher-attendant to make meaningful the verbal description of the location of beds, lockers, and doors. By guiding the patient's hands carefully over this model the teacher-attendant can aid the patient in getting a clear picture of his surroundings. The value of this lesson is increased by immediately proceeding to the entrance of the ward where the patient is given a concise description of the location of the ward in relation to the hospital and compound, then is guided by the teacher-attendant through the ward. He is given a careful explanation of the location of classrooms, their use, furnishings on the ward, and especially how they may assist him in moving about freely and unaided. In giving the explanation of the head facilities, the teacher-attendant must teach the patient how to identify hot and cold water faucets and the importance of sanitation.

Since the nurse's desk is located in the central part of the ward, it serves as a base for the patient in orienting himself to the rest of the ward. The teacher-attendant may explain to the patient that very often he may find his relative location by listening for the telephone on the nurse's desk, the water fountain which is nearby, etc. The teacher-attendant teaches the left side of the ward in much the same manner, and then reviews the entire procedure by checking the patient verbally.

In giving this basic instruction in orientation, the teacher-attendant restores the confidence of the patient and also motivates him to become self-sufficient in getting about the hospital as he goes to his meals, to ship's service, the tailor, post office, eye, ear, nose and throat clinic, Red Cross, and others. Much the same procedure is used in teaching the patient how to orient himself to the hospital as was used in teaching ward orientation. Emphasis will be added on such things as how to proceed through revolving doors, travel in elevators, and steps and the use of the cane as an aid in such places. Periodic checking will indicate the needs of individual patients and instruction will be repeated where such a need is indicated.

Eating technic

The teaching of eating is perhaps one of the most difficult and yet one of the most important tasks in the retraining program. Eating itself is perhaps the most difficult thing the newly blinded patient must retrain himself to do in such a way that he may be socially at ease with his friends and his family. Realizing the importance of a normal environment in eating, all ambulatory patients go to the mess hall for their meals where the teacher-attendants serve the patients and eat with them, thus providing a normal eating environment. Instead of using trays, the plates, cups, saucers and glasses are arranged in the conventional way. This is especially important in the man's adjustment since the eating habits he establishes while he is in the hospital are adequate for him in his home or when he dines out.

The food is arranged on the plate in a clock fashion, with the meat being placed at six o'clock and other foods separated on the plate. When this arrangement has been explained to the patient a few times, it is not necessary to repeat it at each meal. A casual announcement of the menu eliminates any unusual table conversation and the patient proceeds with his eating in a normal way.

The importance of good posture while eating is emphasized. The patients are instructed in the technic of meat cutting, buttering bread, and use of condiments.

From time to time, the teacher-attendant will accompany a patient on his liberty and they will have a meal together in a restaurant. This serves both as a check on the patient's progress in the hospital and affords the teacher-attendant an opportunity to teach the patient how he may get the necessary attention from a waiter, give his order, and ask for his food to be arranged in the customary manner.

The schedule

Recommendations of all staff members are combined to form the basis for the formulation of each patient's schedule. A typical schedule might be that of a staff sergeant in the Marine Corps who completed his tenth year of school, and worked in a hosiery mill as a machine operator prior to entering the service. He had no definite plans for the future. His schedule would be thus: 0830 physical reconditioning; 0930 typing; 1030 music (piano or instrumental); 1300 orientation and travel; 1400 Braille; 1500 occupational therapy (work in shop with tools, leather, etc., at first; x-ray film developing, work in ship's service annex, or machine work later, perhaps). In Braille, typing, and music, every effort is made to arrange schedules so there will be few changes of instructors; however in the work with the teacher-attendant it was felt that each patient should work with at least six different teacher-attendants and schedules have been organized accordingly.

The talking book

One tool which many patients have found very helpful during long hours of bed rest following surgery and during leisure, and for which they will find as great a need in civilian life, is the talking book machine. The machine, in appearance, resembles an ordinary record player. The records for this machine are the books he used to read, the classic, the latest novel, or perhaps the Reader's Digest. They are recorded by the American Foundation for the Blind under the direction of the Library of Congress, and with the permission of the publisher of any copyrighted material. Funds to cover the cost of this service are furnished by the United States Government ($400,000 per annum appropriated by Congress to the Library of Congress).

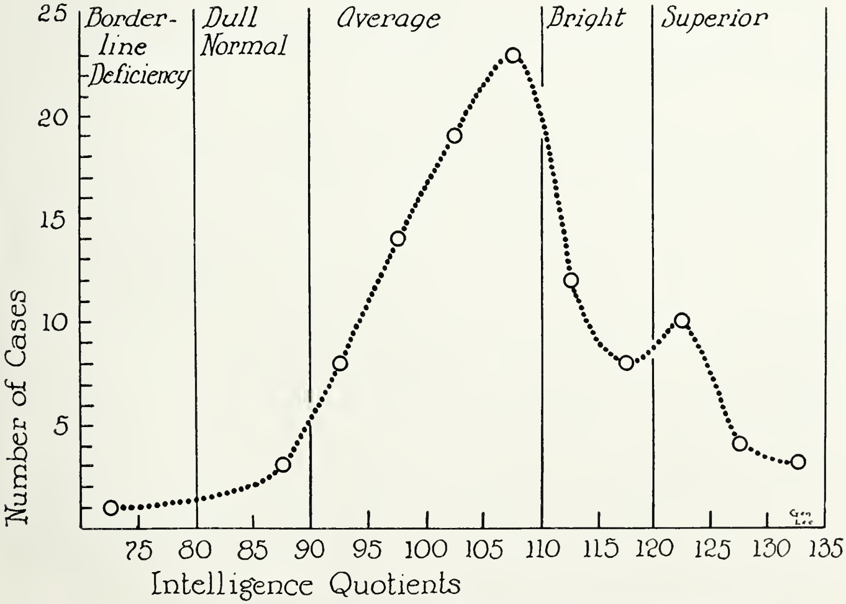
This hospital has an adequate number of machines for the patients' use and records are obtained from the Philadelphia Public Library, Logan Square. Before discharge from the service, each patient may file an application with the American Foundation for the Blind for a machine and obtain records from any one of the 27 distributing libraries located in various parts of the United States or from the Library of Congress. There is no cost to the patient for the machine, for the use of the records, or even the postage to return the records to the library.

Records of progress

Reports of an individual patient's progress are made periodically and serve as a rating scale in the evaluation of the patient's general appearance, his ability to travel with and without a cane, his alertness to grasp new ideas in the retraining process, his emotional stability and his attitudes toward his own program. These records often indicate the need for emphasis on one phase of the patient's rehabilitation. An indication of such a need will be noted by the supervisor of re-education and the patient's program is adjusted accordingly. The supervisor of re-education also maintains records of progress and achievement in Braille, typing, physical reconditioning, prevocational experiences, and reports of work done in occupational therapy. During the period of hospitalization, these records form a means of the systematic checking of progress. At the time of discharge they are assembled to form a composite report to be made a part of the patient's permanent record.

Intelligence and vocational testing

The newly blinded patient's adjustment is furthered by spending a period of two weeks at the New York Institute for the Education of the Blind, under the direction of Dr. Merle E. Frampton, principal. Psychologists, trained and experienced in administering tests for the blind, measure the intelligence and mechanical skill of these newly blinded patients. Data are assembled to suggest the direction of the patient's vocational and social interests. The results of these



3. Distribution of intelligence quotients of blinded patients.

tests and the Institute's recommendations are placed at the disposal of the Naval staff. During hospitalization these results aid staff members in planning the patient's program and at the time of discharge these vocational profiles are incorporated in each man's permanent record to be used as a guide for future vocational and educational training.

Psychologic tests administered at the Institute include tests of general intelligence, mechanical aptitudes, manual abilities, vocational preference and, when indicated, tests of social and personal adjustment. To date, intelligence quotients have been secured for 106 patients. One hundred two of these were obtained from the Wechsler-Bellevue Scale and four from the Hayes-Binet. Only verbal scales were used. The mean average intelligence quotients of all those tested has been 106, the range of I. Q's. from 71 to 131 (fig. 3). Mechanical aptitude tests given include those of Wiggly Block Assembly given to 101 testees; Radio Tube Inserting to 70; Matching Forms to 50; and the Playskool Assembly to 10. The Wiggly Block test was most universally given. The subject usually took one of the others in addition.

Table 1 illustrates results of the 110 patients on the following tests given to ascertain manual ability: Minnesota Rate of Manipulation (both placing and turning) given to 65; Detroit Manual Ability to 98; Hand Tool Dexterity to 99; Dual Hand Dexterity (marble dropping) to 77; Miscellaneous Hardware Sorting to 77; Small Parts Assembly to 95; Washer Sorting to 75; Screw and Washer Assembly to 83.

TABLE 1.—*Results of tests for manual ability*

Test	Total testees	Numbers by classification		
		Inferior poor	Low average average high average	Above average superior
Wiggly block	101	13	43	45
Minnesota rate of manipulation:				
Placing	65	20	25	20
Turning	65	10	15	40
Detroit manual ability	98	31	50	17
Hand tool dexterity	99	20	40	39

Vocational preference tests, per se, were not so widely employed. The Kuder Preference Record was given to 10, the Standard Diagnostic Interview Guide to 27; the Cleeton Interest Inventory to 12; and the Bingham Vocational Interview to 2.

To test social and personal adjustment, the 12 patients so tested were classified on the Bell Adult (Form A) scale.

Prior to the establishment of our program with the New York Institute for the Education of the Blind, men were given vocational tests and study at the Trainees' Acceptance Center of the School District of Philadelphia. Their performance on intelligence, manual, and mechanical tests has been included in the survey above. In addition, this Center made use of the Pennsylvania Assembly and Disassembly tests of mechanical ability and Tool Samples I to XI.

Instruction in typing

Another phase of the re-education program includes instruction in typing. Newly blinded patients are readily interested in learning to type. Reasons for this are quite obvious. Typing offers an additional opportunity to become independent. The value of this independence is seen in the personal satisfaction a patient achieves in being able to go into a room, close the door and type a letter without the interference or assistance of another person. Once again a means of normal communication with the sighted world is established.

Systematic, daily typing instruction is provided for each patient, adjusted to his needs, since educational backgrounds of the patients differ greatly. The 47-year-old man whose education was limited to grammar school may require much more intensive drill than the 19-year-old lad who, in addition to being a high school graduate, has studied the accordion for a number of years and whose fingers are quite agile.

No special adjustments are made to the standard typewriters used for instruction except in the case of patients having arm or finger amputations.

In the teaching of typewriting to the newly blinded, the instructor is giving the patient much more than typewriting. The patient must learn to *concentrate*, to combine the manipulative process of striking the keys, returning the carriage, etc., with the mental process of learning key positions, rules for spacing, etc. The combination of the physical process of operating the machine and the building of words, phrases and sentences until the procedure is accomplished with ease requires much supervised repetitive drilling.

The primary aim in the teaching of typewriting is the development of accuracy. Logically this comes about only when the patient has realized the value of the emphasis of correct habit formation and can readily see that speed will be greatly increased by his accuracy.

The touch system of typing, which is now universally used by commercial departments in public schools and business colleges, is the basis for giving instruction. The teaching procedure is started by a careful explanation of the parts of the machine. As the patient learns each, he is encouraged to recognize them by touch and to manipulate the moving parts of the machine freely. Inserting and removing the paper, setting of the marginal stops, etc., is taught in the first lessons. Good posture is emphasized after an explanation of its importance and how it can directly contribute toward his efficiency in the operation of the typewriter.

In learning the keyboard, the home row is taught first, beginning with the index finger of the left hand. The instructor will direct the patient to type *ffff* space, *ffff* space, etc.

Since with approximately 78 percent of the newly blinded patients, lasting impressions come through the ear rather than the eye, it is especially important that he learn to type rhythmically. When this habit is established early in the instruction period, it expedites learning.

Progressing from the home position, the patient is given simple drills. At first, these are up-and-down drills, such as *frf frf juj kik did*, and others. As the patient masters the keyboard, he does phrases, sentences and paragraphs. Letter writing is introduced as soon as the patient's skill permits typing with ease. Social correspondence is taught first, since the patient's immediate need is to be able to care for his personal correspondence. Later, business forms, the use of the tabulator in making reports, etc., are taught, as well as care of the machine.

The patient receives a typewriter upon the completion of 36 hours of instruction, provided that he has attained a minimum speed of 25 words per minute (additional limitations caused by shell fragment wounds, amputation, etc., excepted) and has a knowledge of letter forms and of the operating technic and care of the machine.

Weekly reports are made by the instructors to the supervisor of re-education. The patient's proficiency is indicated by rating his speed, accuracy, posture, touch, rhythm, and his attitude in general.

Of the 100 patients discharged, 82 have received typing instruction. Of the 18 who did not receive instruction, 3 were discharged before formalized instruction was offered, and practically all of the remaining 15 had mastered typing before being blinded. Forty-six of the present patient group have completed their work in typing or are under instruction.

Instruction in Braille

The actual beginning of the study of Braille, marks, on the part of each patient, the overcoming of a basic psychologic obstacle. It means he has accepted his blindness, and in so doing, is taking one of his first forward steps in his process of rehabilitation. It means he has grasped the value of Braille as a practical method of reading and writing. The Braille instructor must take repeated cognizance that these all important factors be achieved and maintained by the patient. A primary point of guidance in the teaching of Braille to blinded Naval personnel is the fact that one is working with young adults whose service experience has removed them far from the confining atmosphere of the classroom.

In general the task of introducing Braille to the average blinded serviceman and creating an interest in it on his part is a complex one which requires much patience and skill of the teaching staff. The story of "Whereas I was Blind," by Sir Ian Frasier, has been successfully used to interest students in Braille. Not only must the instructor impress the student with the fundamental intellectual purposes of reading and writing, but also he must be ever alert to the practical reasons for learning Braille. There is an immediate feeling of achievement which each blinded patient gets upon his first successful attempts at reading Braille and the sustaining of this original enthusiasm is the continuous obligation of the instructor. Naturally those men who liked to read before they lost their sight are ready to avail themselves of the opportunity of acquiring the ability to read again. Those who plan to continue their formal education after discharge recognize the value of Braille and are eager to master it.

In addition to embossed books and periodicals, the teachers are aided in creating interest for the student by such tangible objects as talking book records which are titled in Braille and by the Brailled relief map of Philadelphia. Every positive means of motivation is of value, even if it be such a method as telling the recalcitrant patient that a knowledge of the technic will enable him to keep his own telephone list. This, in actuality, was the single point which sold a Tarawa veteran on embarking on the study of Braille. Again the fact that the Braille teacher is working with active young adults may often require that his pedagogy move on radical tangents. Frequently, to keep the patient's attention, the teacher may permit him to advance to an intellectual grasp of Braille which far outdistances his physical ability to isolate combinations of dots by touch. (The mind may be at the high-school level while the finger is still confined to kindergarten.) Gradually this means of motivation will produce a coordination enabling the hand to keep pace with the brain. This type of acceleration was especially effective in the case of a 28-year-old Marine sergeant, whose preservice years had been spent in CCC camps and iron foundries. To him the reading matter incidental to learning each letter of the alphabet in turn seemed childish, and it was, therefore, necessary to allow him to memorize the letters and punctuations of Grade I Braille before he would begin to use his fingers.

Each time the patient's interest tends to lag, the instructor must administer an additional stimulus; the use of the Braille writer always provides a refreshing change-over from the routine reading and memorizing. It affords a satisfaction by leading to an accomplishment which he can perceive. Moreover it is helpful in other ways. By the time the patient has mastered the operating technic of the writer and has written out the alphabet several times, he has usually advanced in reading practice to the point at which he is ready to begin Grade 1½. Used at any time in his course, the writer forces the patient to remember the dot formations for the grade in which he is working. Introducing the student to playing cards with Braille markings is another useful tool, not only to enliven the routine of study, but also to demonstrate the value of learning Braille for purely recreational pursuits.

In introducing a new grade of Braille or further contractions, a check on the amount of material the student could cover in a given time, using the less contracted system compared to the greater amount covered in the same time by using the new grade, provides a point of renewed interest in greater achievement.

It has been found most practical and efficient to give each rehabilitee individual instruction; first because the patient's convalescent period may require surgical and medical treatment which will interrupt the progress of his classes and second because each patient manifests distinct mental and physical characteristics.

The occupational and psychotherapeutic overtones of the study of Braille are a distinct feature in the rehabilitation scheme. Reading Braille is actually a mechanical motor process, a coordination between the fingertips and the brain. On the other hand, a distinct, personal, intellectual satisfaction arises from the accomplishment of being able to employ the tactual senses. Whenever possible the patient is encouraged to read with both hands so that he may acquire speed as well as accuracy. It has been noted in numerous cases where the patient becomes proficient in Braille that his proficiency in other phases of rehabilitation is increased. This may be attributed to the habit formation resulting from drills to improve fingertip-brain coordination.

In introducing the patient to Braille physically, it is helpful to point out the similarity of the entire Braille cell to the "six" dots on the "six" of dominos or the "six" on dice. A brief history of the development of the Braille system may be given at this time. By using the peg board, a simple device resembling a cribbage board with the holes holding the pegs arranged like a Braille cell, the student learns how Louis Braille formed his alphabet by using various combinations of one or more of the "six" dots.

The first 10 letters of the alphabet are the basis for the formation of all the other letters, number sign, punctuation marks, and contractions. In the first lesson, the patient is introduced to the letters "a," "b," "c," "d," and "e." It is necessary that the pupil learn which dots are used to represent each letter. The dots within the cell are numbered down, thus:

1 . . 4
2 . . 5
3 . . 6

It is not only necessary that the student memorize the number of the dots in each letter, but that he develop a mental picture of each. Here again the peg board will aid him.

With the teaching of the letters "f," "g," "h," "i," and "j," the patient encounters some difficulty and confusion. The Braille letters for f, d, h, and j are all corner characters but the differentiation is not easy. There are two ways which may clarify this; both employ association. (1) Call to the patient's mind the shape of the table before him which has four corners. The letter "d" resembles the upper right hand corner, thus: •: ; the letter "f" the upper left hand corner of the table, thus: :• ; the letter h the lower left hand corner, thus: :. ; and the letter "j" the lower right hand corner, thus: .: . (2) One may also point out the resemblance in shape of the Braille characters to the capital ink-printed letter, i. e., "D," "F," "H," "J."

While the patient is learning the formation of the first 10 letters of the alphabet, it is essential that he develop certain technics of reading. He must learn to distinguish one dot from two, a vertical line of dots from the horizontal and the diagonal. The sense of touch must be developed. The most sensitive of the fingers, usually the right index finger, should be used by the patient for reading. The large, or giant, dots used in Book I of the Standard Braille Series, are most helpful if not absolutely necessary for the beginner.

Braille is read from left to right as is ink print, and it is essential that the pupil learn and consistently use some technics to keep his place as he is reading. The Standard Braille Series uses "guide lines" to help the beginner get a mental picture in which his reading finger should travel. There are two technics commonly used to keep the place. Both are good. The right-handed may mark the beginning of the line being read with the left index finger. As the end of the line being read is approached, drop the left hand down to the next line and bring the reading finger back to meet the left hand. The left or right handed reader may slide the reading finger from the last word of the line back to the beginning word of the next line on the space below the line just read.

Suggestions that will aid the beginner in reading Braille are: Touching the dots lightly with the ball of the finger; making the point of contact between the finger and the Braille cell as narrow as possible; and sliding the finger from left to right, touching the first column of dots in the cell first. These three technics aid the student in feeling the dots individually in each character accurately and quickly. It also insures smooth left to right reading.

After the first ten letters of the alphabet are learned, the patient should memorize the Braille numbers. The number sign is introduced and it is explained that the first 10 letters of the alphabet (preceded by the number sign) are used to represent the Arabic numerals; namely:

1	2	3	4	5	6	7	8	9	10
⠼⠁	⠼⠃	⠼⠉	⠼⠙	⠼⠑	⠼⠋	⠼⠛	⠼⠓	⠼⠊	⠼⠚

The response to one drill should be and usually is automatic. Practice in using numbers can be given daily in locating the page to be read, in using the calendar, playing with Braille cards, etc. Several patients have seen their first convincing evidence of the value of Braille in connection with their money by merely putting the number sign and 1, 5, 10, etc., on paper money.

The student should next learn the formation of, and be able to identify, the letters "k," "l," "m," "n," "o," "p," "q," "r," "s," and "t." The development of the second 10 letters by adding dot 3 to each of the first 10 letters should be explained to the student. Then practice in the form of oral drill, dot identification, and reading should follow. When the patient is ready, proceed with the last six letters of the alphabet, "u," "v," "w," "x," "y," and "z." These six letters are developed by adding dots 3 and 6 to each of the letters "a," "b," "c," "d," and "e." The letter "w" was not in Braille's original alphabet since it does not exist in French; hence it does not follow logically in the development of the letters. Students will probably realize that the letter "w" is the reverse of "r" and should study the difference between the two letters.

When the study of the alphabet has been completed satisfactorily, the punctuation marks should receive consideration. These, too, should be memorized. The student may be made aware of the relationship between the first 10 letters of the alphabet and the punctuation marks. Generally speaking, the punctuation marks are formed by dropping each of these first 10 letters into the lower part of the Braille cell. It is better to identify each punctuation mark as the patient goes on with his reading, rather than spend time teaching formal grammar. If the patient recalls his punctuation from sighted reading, few formal lessons on punctuation are necessary.

Reading of the word signs is satisfying, since the rate of speed in reading is greatly increased. When the word signs have been mastered, the Braille contractions may be presented. The study of contractions may prove quite interesting. By pointing out the similarity to shorthand in the use of a sign to express more than one letter, the patient can easily grasp the well-planned organization of Braille, and he is often convinced that it will soon cease to be "dots on a page" and become a useful technic.

Further practice in identifying contractions individually, reading of contractions in words, sentences, and stories is given. For such practice, stories from current magazines or favorite bits of poetry or prose may be used.

The completion of Grade 1½ Braille entitles the patient to discontinue his Braille instruction; however it will be noted many desire to study Grade II. In learning Grade II Braille, the pupil must be aware of the importance of developing technic and memory aids, and of the necessity of constant concentrated practice. The instructor's part, as we stressed in the beginning, will be to maintain interest by providing the pupil with satisfying experiences and keeping the practical functional aspects in the foreground.

Statistics from our program indicate that of the 100 patients discharged, 74 received instruction in Braille and achieved the following level: 7 completed Grade III; 23 completed Grade II; 31 completed Grade 1½; 13 studied in Grade I. For various mental, psychologic, or physical reasons the group of 13 did not complete their work and continue into Grade 1½. It was indicated earlier in this paper that in accepting Braille, the patient has taken an important step in adjustment to his handicap. Some rehabilitees had not made this adjustment during the early stages of their retraining, and it was believed compulsion at that time would be unwise. Several patients labored diligently in the study of Braille and were able to master the mental part but lacked tactual ability. Medical officers could determine no physical disability.

Of the 26 dischargees who did not receive instruction, 3 were discharged before a formalized program of instruction was set up, and 20 had sufficient vision, or vision improved, to enable them to read ink print. Forty-four patients are receiving instruction at the present time.

Accurate records of the patient's progress in the form of weekly reports were made to the supervisor of re-education. These reports indicated the patient's speed, frequency of error, posture, touch, and proficiency in use of the Braille writer and the slate and stylus.

The average number of lessons required for acquiring a knowledge of Grade I was 25. Naturally, this number varied inversely with the intelligence of the patient, the more intelligent being able to grasp the 26 letters and the 11 major contractions in fewer lessons. The 23 initial abbreviations and the 17 new contractions which make up Grade 1½ were mastered in a shorter time, on an average in 15 lessons. This was primarily due to the fact that the sense of touch was already adequately developed and the main task now was memorizing the meanings of the contractions. Because there are no new single-cell combinations of dots in Grade II, another month of lessons generally sufficed to make the student proficient in reading and writing the 66 additional meanings and contractions and the 73 abbreviated words which constitute this advanced Braille. In Grade III, which is the most highly contracted form of Braille, no attempt was made toward making a student memorize the contractions and abbreviations; instead he was merely assisted in making his own reference handbook of Grade III. Ten lessons provided enough time in which to complete such a handbook.

SUMMARY

On the whole our program has been characterized by continuous expansion in the quantity of activities offered to the patients. Staff members have exhibited imagination and creative ability in every phase of teaching and retraining. Each patient has been helped in every way feasible to realize his limitations, explore his abilities, and take his first steps in a determined preparation to take a positive, productive and independent place in his home and community life.

The program has essentially given to 157 blinded sailors and Marines initial orientation, basic re-education, general psycho-social readjustment, and prevocational training and vocational guidance. The initial orientation acquainted the patient with his immediate environment through the use of verbal description, relief maps, and a series of controlled and graduated experiences in the hospital, and on the compound. Basic re-education included instruction in basic skills such as the use of a cane, location and identification of objects, personal toilet, the care of personal belongings, eating, posture and gait, and the mastery of Braille and typing. Psycho-social re-adjustment was furthered by group conferences with departmental administrators, and through a carefully planned social and recreational program. Prevocational training followed accurate testing, and vocational guidance encouraged the patient to re-adapt his handicap to previous vocational experience or pursue a training program.

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1524	10	"	7	"	"	1530	12	"	9⅛	"	"
1525	9	"	6	"	"	1532	13	"	10	"	"
1526	9¾	"	7⅛	"	"	1533	14	"	11	"	"
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